DSM2-DB
Changes from DSM2
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Introduction

The database version of DSM2 is nearing completion. DSM2-DB has these changes from DSM2:

- *Fixed data now reads from a relational database, not from text files.* This allows for better control of data and a better guarantee that different studies using the same Delta design elements (e.g. permanent barriers, or a Through-Delta facility) will use identical parameters. It also allows for a much easier implementation of a GUI.
- *Graphical User Interface.* The GUI enables much easier review of changes from an initial study (e.g. historic base case) to a plan study. It is not intended to run the model or examine time-varying data, but only to allow manipulation of the fixed data in the database: adding new data and editing and deleting existing data.
- *Increased Gate Capabilities.* Gates now are collections of *devices*. The devices contain the physical dimensions and parameters of what we now call gates, so a single gate may contain several independent devices. Furthermore, gates can now be operated by several criteria or *triggers* during a model run.

Pending Tasks

1. **Micro calibration/validation on historic run.** This would finish implementing the historic run, establish and fine-tune the new gate devices for the historic run, and re-validate. No operating rules used, all device operations would be from observed data.

2. **Finish development of planning runs, one for temporary barriers, another for permanent barriers.** Explore operating rules for planning runs. Need to acquire experience and rules-of-thumb in how the feature can be used, and what new extensions would be useful (pumping action, lift stations, trigger timing, other).

    a. Temporary Barriers (TBs)—base work on Jim's temporary barrier work. Preprocessor used to install/remove TBs.
    b. Permanent Barriers (PBs)—base work on S. Delta barrier work. How close will operating rules come to perfect foresight (iterative) system?

3. **Finish DSM2/DB/GUI work.**

    a. Move the database from MS Access to Firebird—needed for multi-user, simultaneous access.
    b. Initial conditions: Verify restart file works well.
    c. Water body Groups and revise internal source tracking. This is mainly for QUAL, but has extensions to PTM.
    d. Multiple QUAL/PTM per simulation. The ability to add and remove models in the GUI must be enhanced to deal with this, and some small modifications required in the database.
    e. Some work on GUI Help system.
    f. Other enhancements and operating rule additions. Enhancements and extensions to current rules will be driven by user needs as they are discovered.